**Farmer Marketplace**

**(Project Proposal)**

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**Project Manager =>**

Mr. Fahad Maqbool

**Project Advisor =>**

Mr. Abid Rafiq

**Project Team =>**

Chaman Abbas (BSSE51F20R035) (Group leader)

Abdullah (BSEF19E030) RE (Group member)

Zeeshan Ahmad faraz (BSEF19E024) RE (Group member)

**Submission Date =>**

October 4, 2023

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# **Abstract**

The marketplace app can provide increased access to markets, fair pricing, reduced wastage, improved profitability, transparency, and traceability. It also empowers small-scale farmers, provides market information, and enables direct feedback and communication. Additionally, it creates job opportunities and supports local economic growth. There are some challenges in achieving all that limited digital literacy among farmers and the need for reliable infrastructure and connectivity. Trust and reliability, adoption and awareness and sustainability and scalability are also important considerations. To address the challenges, we can offer training, build trust through success stories, translate the app into local language, establish quality control guidelines, provide accessible payment options, implement a feedback system, and continuously update the app. We are going to build an app that will revolutionize the way farmers in Pakistan sell and buy their products. We'll use Figma for design, React Native for front-end, and Node.js with MongoDB for backend. Using Figma for design allows for collaborative and efficient UI/UX design, React Native for front-end development enables cross-platform compatibility and faster development, and Node.js with MongoDB for backend provides scalability, flexibility, and seamless data storage and retrieval.

# **Background and Justification**

In Pakistan, the agricultural sector plays a crucial role in the economy, providing livelihoods for a significant portion of the population. However, farmers often face challenges in accessing fair markets to sell their crops at reasonable prices. This has led to a need for a dedicated marketplace application to connect farmers directly with potential buyers.

Currently, there are limited platforms available that focus specifically on creating a marketplace for farmers in Pakistan. Some existing initiatives have made efforts to bridge this gap by providing online platforms for farmers to improve their produce like [Bakhabar Kisan](https://play.google.com/store/apps/details?id=com.switchsolutions.agricultureapplication.mobilink&pcampaignid=web_share) , [Kisan ghar](https://play.google.com/store/apps/details?id=com.jahan.kisan&pcampaignid=web_share), [Kisan madadgar](https://play.google.com/store/apps/details?id=com.app.concave_agritech&pcampaignid=web_share), [Agreesmart](https://play.google.com/store/apps/details?id=pk.gov.pitb.agrismart&pcampaignid=web_share) . However, these platforms often lack the necessary features and reach to effectively connect farmers with a wide range of buyers to sell their product without a middleman.

To enhance and continue the work in this area, I propose to develop a comprehensive application that addresses the specific needs of farmers in Pakistan. The application would provide a user-friendly interface where farmers can create profiles, list their crops, and showcase their produce with detailed information and images.

The application would leverage geolocation technology to connect farmers with local buyers, reducing transportation costs and ensuring fresher produce. It would also provide access to valuable resources such as market trends and crop management tips.

By enhancing the work in this area, the application would empower farmers by providing them with a wider customer base, fair pricing, and access to valuable information. It would contribute to the growth of the agricultural sector in Pakistan, fostering economic development and improving the livelihoods of farmers across the country.

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# **Project Methodology**

**Agile Methodology:**

1. Sprint Planning: Set goals and prioritize features for each sprint.
2. Development: Implement features in iterations, focusing on high-value functionalities.
3. Daily Stand-ups: Have short daily meetings to discuss progress, challenges, and next steps.
4. Sprint Review: Gather feedback from farmers and buyers to improve the marketplace.
5. Sprint Retrospective: Reflect on the sprint, identify areas for improvement, and adjust the approach.

**Action Plan:**

1. Research: Understand farmers' and buyers' needs.
2. Design: Define the features and prioritize them (using figma)
3. Development: Build the marketplace using advanced technologies (React native, Node.js with mongoDB).
4. Testing: Ensure the marketplace is user-friendly and bug-free.
5. Launch: Deploy the marketplace and gather feedback.
6. Improve: Continuously enhance the marketplace based on user input.

# **Project Scope**

The proposed farmer marketplace system will include features such as:

1. User registration and authentication (for both sellers and buyers to create and Login accounts).
2. Listing and browsing of agricultural products (will allow seller to upload their products and list them & will allow buyers to buy products from listing)
3. Communication and negotiation between farmers and buyers (We'll integrate socket.io, a powerful library for real-time, bidirectional communication between the client and server).
4. Payment processing and transaction security (we'll integrate modules like Stripe to enable secure online transactions. Additionally, we'll also integrate local mobile wallets like EasyPaisa and JazzCash to cater to the specific payment preferences of users in Pakistan).
5. Push notifications to keep farmers updated on their listings and any new inquiries.
6. To achieve language and localization we will use react-i18next that gives us functionality to add multi language applications.
7. Feedback and rating system for users to build trust and credibility among buyers and sellers.

The system will not include:

1. Physical delivery or logistics management.
2. Extensive data analysis or predictive modeling.
3. Advanced inventory management features.
4. Integration with third-party platforms or APIs.

# **High level Project Plan**

**Week 1: Designing the Buyer Side With Figma 🎨**

Creating a user-friendly interface for buyers, focusing on their needs and preferences using Figma

**Week 2: Designing the Seller Side with Figma🎨**

Designing an intuitive interface for sellers, ensuring a seamless selling experience using Figma.

**Week 3: Refining the Buyer Side UI/UX ✨**

Review and improve the user interface and experience for buyers based on valuable feedback.

**Week 4: Iterating on the Seller Side UI/UX ✨**

Gather feedback and make necessary improvements to the user interface and experience for sellers.

**Week 5: Developing the Buyer Side with React Native ⚙️**

Development of the buyer side using React Native for both front-end and back-end functionalities.

**Week 6: Developing the Seller Side with React Native ⚙️**

Developing the seller side using React Native, ensuring a seamless selling experience.

**Week 7: Reviewing and Iterating on the Buyer Side Front-end 👩‍💻**

Review and iterate on the front-end development for the buyer side, ensuring a smooth user experience.

**Week 8: Reviewing and Iterating on the Seller Side Front-end 👩‍💻**

Review and iterate on the front-end development for the seller side, ensuring a seamless selling experience.

**Week 9: Developing the Buyer Side Back-end with Node.js ⚙️**

Back-end development of the buyer side using Node.js for a robust and efficient system.

**Week 10: Developing the Seller Side Back-end with Node.js ⚙️**

Back-end development of the seller side using Node.js for a reliable and scalable system.

**Week 11: Reviewing and Iterating on the Buyer Side Back-end 👨‍💻**

Review and iterate on the back-end development for the buyer side, ensuring it aligns with our objectives.

**Week 12: Reviewing and Iterating on the Seller Side Back-end 👨‍💻**

Review and iterate on the back-end development for the seller side, ensuring a robust and efficient system.

**Week 13: Integrating Back-end APIs into the Buyer Side Front-end ⚙️**

Integrate the developed back-end APIs into the front-end for the buyer side, ensuring seamless

**Week 14: Testing and Debugging 🧪🐛**

Test the functionality of the buyer and seller sides, fixing any bugs or issues that arise.

**Week 15: User Testing and Feedback 🧑‍🔬✍️**

Conduct user testing sessions to gather feedback and insights, making necessary improvements based on user preferences.

**Week 16: Launch and Continuous Improvement 🚀🔄**

Finally, we'll launch the farmer marketplace, gather user feedback, and focus on continuous improvement to enhance the overall experience.

# **References**

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